UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

MEMORANDUM

SUBJECT: Five-Year Review for the Hewlett-Packard 620-640 Page Mill Road Superfund Site, CA
EPA ID# CAD980884209

FROM: Tom Kremer, Superfund Policy Advisor
Site Cleanup Branch

T Kremer 9/13/2000

THRU: John Kemmerer, Chief
Site Cleanup Branch

TO: Keith Takata, Director
Superfund Division

I. INTRODUCTION

Attached, please find a copy of the first Five-Year Review for the subject Superfund Site prepared by the California Regional Water Quality Control Board, San Francisco Bay Region. EPA has reviewed their Five-Year Review and adopts their recommendations as written. The Board's Five-Year Review is summarized below.

Because contaminant levels will allow for unlimited use and unrestricted exposure upon achieving ROD cleanup goals, this Five-Year Review is not required by CERCLA (Section 121©) or by Section 300.430(f)(4)(ii) of the NCP. However, because cleanup will take five years or more to attain, this Five-Year Review must be conducted as a matter of Agency policy (OSWER Directive 9355.7-02, "Structure and Components of Five-Year Reviews", 5/31/91. This review (Type 1) is applicable to sites at which construction is complete (OSWER Directive 9355.7-02A, "Supplemental Five-Year Review Guidance", 7/26/94.

II. FIVE-YEAR REVIEW SUMMARY

The site is located at 640 Page Mill Road in Palo Alto, California. Investigations beginning in 1981 indicated that soil and groundwater were contaminated by VOCs, primarily TCE, PCE and 1,1,1-trichloroethane. EPA proposed listing the site on the National Priority List in 1988 and finalized the listing in 1990. Groundwater contamination was and is confined to the upper aquifers; deeper aquifers providing public water supply have not been impacted. Interim soil remediation, conducted from 1981 to 1994, included the excavation and offsite disposal of 7700 cubic yards of contaminated soil. Soil vapor extraction began in 1994. Interim groundwater extraction began in 1982.

The ROD, signed by EPA on 6/30/95, set soil and groundwater cleanup standards for the site, required operation of a soil vapor extraction system, and required on- and off-site ground water extraction and treatment.

Hewlett-Packard Company has implemented the required remedial actions, operating onand off- site ground water extraction and treatment and on-site soil vapor extraction systems. SVE systems have been effective in removing VOCs from the unsaturated zone. Vadose zone remediation appears to be near completion; however, additional data gathering is pending to determine current VOC levels. The Regional Board will need to work with Hewlett-Packard to determine if SVE needs to continue, or if alternative approaches for completing remediation of deeper soils are necessary and appropriate. Ground water systems have been effective in containing the plume and reducing concentrations of contaminants in ground water, and continue to operate. Institutional controls limiting access to contaminated site groundwater are in place and enforceable by the Regional Board. No exposure to contaminated groundwater is occurring or expected. The site was most recently inspected by Regional Board staff in May 2000. Full achievement of cleanup standards remains years away.

III CONCLUSION

I certify that the remedy selected for this site remains protective of human health and the environment. Based on the expected continuing presence of contamination at this site at levels which preclude unlimited use and unrestricted exposure, the next Five-Year Review will be written within five years from the signature date of this review.

Approved by: Keith Takata — Date: 9-14-00

Keith Takata, Director
Superfund Division

Attachment: California Regional Water Quality Control Board 5-Year Review

California Regional Water Quality Control Board
San Francisco Bay Region

Winston H. Hickox
Secretary for Environmental Protection

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Gray Davis
Governor

September 6, 2000
File No. 2189.8063A (BLS)

Mr. Tom Kremer
USEPA Region 9 (SFD-7)
75 Hawthorne Street
San Francisco, CA 94105

SUBJECT: Submittal of 5-Year CERCLA Review for Hewlett-Packard Company Site, 640 Page Mill Road, Palo Alto, Santa Clara County

Dear Mr. Kremer:

Enclosed for your records and review is a copy of the 5-year CERCLA review for the subject Superfund site.

If you have any questions, please contact Brett Stevens of my staff at (510) 622-2349 or by e-mail at bls@rb2.swrcb.ca.gov.

Sincerely,

Lawrence P. Kolb
Acting Executive Officer

Stephen A. Hill, Chief
Toxics Cleanup Division

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Five-Year Review (Type I)
Hewlett-Packard Company, 640 Page Mill Road,
Palo Alto, California

I. Introduction

Authority Statement and Purpose: EPA Region IX conducted this policy review pursuant to CERCLA Section 121(c), NCP Section 300.400(f)(4)(ii), and OSWER Directives 9355.7-02 (May 23, 1991) and 9355.7-02 (July 26, 1994). The purpose of a five-year review is to ensure that a remedial action remains protective of public health and the environment and is functioning as designed. This document will become a part of the Site File. This review (Type I) is applicable to a site at which response is ongoing.

Site Characteristics: The 640 Page Mill Road Hewlett-Packard site (640 PMR) is a federal Superfund site in the South Bay that is overseen by the Board under an agreement with the USEPA. Pursuant to its 1994 Site Cleanup Requirements, HP has evaluated the remedial activities performed at the site to determine if the selected cleanup plans are working. The results were presented in a report titled *"Five-Year Status Report and Effectiveness Evaluation,"* which was submitted on 1 June 2000.

The 640 PMR site is located south of Highway 101 in Palo Alto (see attached map). Groundwater contamination from this site commingles with similar discharges from two nearby sites: HP 395 Page Mill Road, which is located to the north of 640 PMR; and the Varian Medical Systems, Inc., 601 California Avenue site, which is located to the northwest. The offsite VOC plume extends approximately 1,500 feet downgradient of the HP 640 PMR site.

Site investigations, which began in 1981, identified VOCs in soil and groundwater. The main contaminants of concern are 1,1,1-trichloroethene, trichloroethene, tetrachloroethene and their byproducts. VOCs in groundwater are limited to the upper aquifers and have not impacted deeper aquifers used for public water supply.

Interim soil remediation at 640 PMR involved the excavation of approximately 7,700 cubic yards of contaminated soil. These excavations occurred intermittently from 1981 to 1994. Construction of a soil vapor extraction and treatment (SVET) system, which included 28 soil vapor extraction wells, was completed in April 1994. The SVET system operated full-time through 1994 and 1995. It was periodically shutdown and restarted during 1996 and the first half of 1997 to allow for VOC rebound and more efficient system operation. The SVET system was shutdown in August 1997 because of rising groundwater levels at the site that have saturated the most productive SVE wells.

Interim groundwater remediation in the form of groundwater extraction began in 1982 at the site. The onsite groundwater extraction and treatment (GWET) system was refined with additional

wells and removal of ineffective wells throughout the 1980s and 1990s. The GWET system currently has seven onsite groundwater extraction wells that are screened in the shallow (A Zone) aquifer. The treated groundwater is partially reclaimed onsite as irrigation water, and the remainder is discharged to Matadero Creek.

Further hydraulic control and remediation of the 640 PMR VOC plume is achieved by seven offsite groundwater extraction wells that are screened in the A Zone aquifer. Extracted groundwater is treated and discharged to Matadero Creek.

The Oregon Expressway Underpass (OEU) dewatering system, which predates the 640 PMR GWET system by several year, also provides offsite hydraulic control for the 640 PMR VOC plume. This gravity-flow dewatering system was originally installed to prevent flooding where Oregon Expressway underpasses Alma Street; however, it is also well situated to provide the aforementioned hydraulic control. Groundwater collected at OEU is discharged to the sanitary sewer.

II. Discussion of Remedial Objectives

The remedial plan was developed using the nine evaluation criteria defined by CERCLA requirements and considerations. The selected remedies were soil vapor and groundwater extraction and treatment. These are the most cost-effective technologies available that are protective of human health and the environment. The soil cleanup standard is 1.0 ppm, and groundwater cleanup standards are the more stringent of USEPA MCLs and CalEPA MCLs.

III. ARARs Review

ARARs have not changed for applicable chemicals of concern.

IV. Effectiveness Evaluation

The GWET system has reduced VOC concentrations in some areas; however, VOC concentrations in groundwater are still above cleanup objectives in many areas, owing to the complexity of site hydrogeology and inherent limitations in current cleanup technology. A summary of GWET system performance from 1995 through 1999 is presented below.

Groundwater Extraction Mass Removal Summary (1995-1999)

	Volume of Extracted Groundwater (Million Gallons [MG])	VOC Mass Removal (Lbs.)	Extraction Efficiency Lbs./MG
Onsite Area	70	900	12.9
Offsite Area	158	393	2.5
OEU System	620	3,426	5.5

VOC concentrations in monitoring wells located along the downgradient or perimeter edges of the offsite area have remained stable at low to non-detectable concentrations; hydraulic control of the VOC plume has therefore been achieved. The Oregon Expressway Underpass dewatering system continues to be a critical component in maintaining hydraulic control of the VOC plume.

Remediation of vadose zone soil at the 640 PMR site appears to be near completion; however, data gathering to determine vadose zone VOC concentrations at these sites is pending at this time.

V. Summary of Site Visit

Regional Board staff inspected the 640 PMR site most recently in May 2000. The GWET system was operating properly, and the site appeared to be in complete compliance with Site Cleanup Requirements and NPDES permits. The SVE system was shutdown in August 1997 because of groundwater intrusion into SVE wells.

HP is currently subletting the property to another commercial enterprise. The site land use continues to be industrial/commercial, which is consistent with the land use and chemical exposures predicted in the original risk assessment.

VI. Areas of Noncompliance

The discharger has fully implemented the approved remedial action consistent with the remedial objectives. No areas of noncompliance exist.

VII. Recommendations

The 5-year status report recommends continued operation of the existing groundwater remedial system with no significant modifications at this time. There are no alternative remedial technologies available that would significantly improve the effectiveness of the implemented remedies. The report also recommends evaluation of alternative approaches for completing remediation of deeper soils at the 640 PMR site.

VIII. Next Five-Year Review

The next 5-year review will be conducted by June 1, 2005.

ATTACHMENT

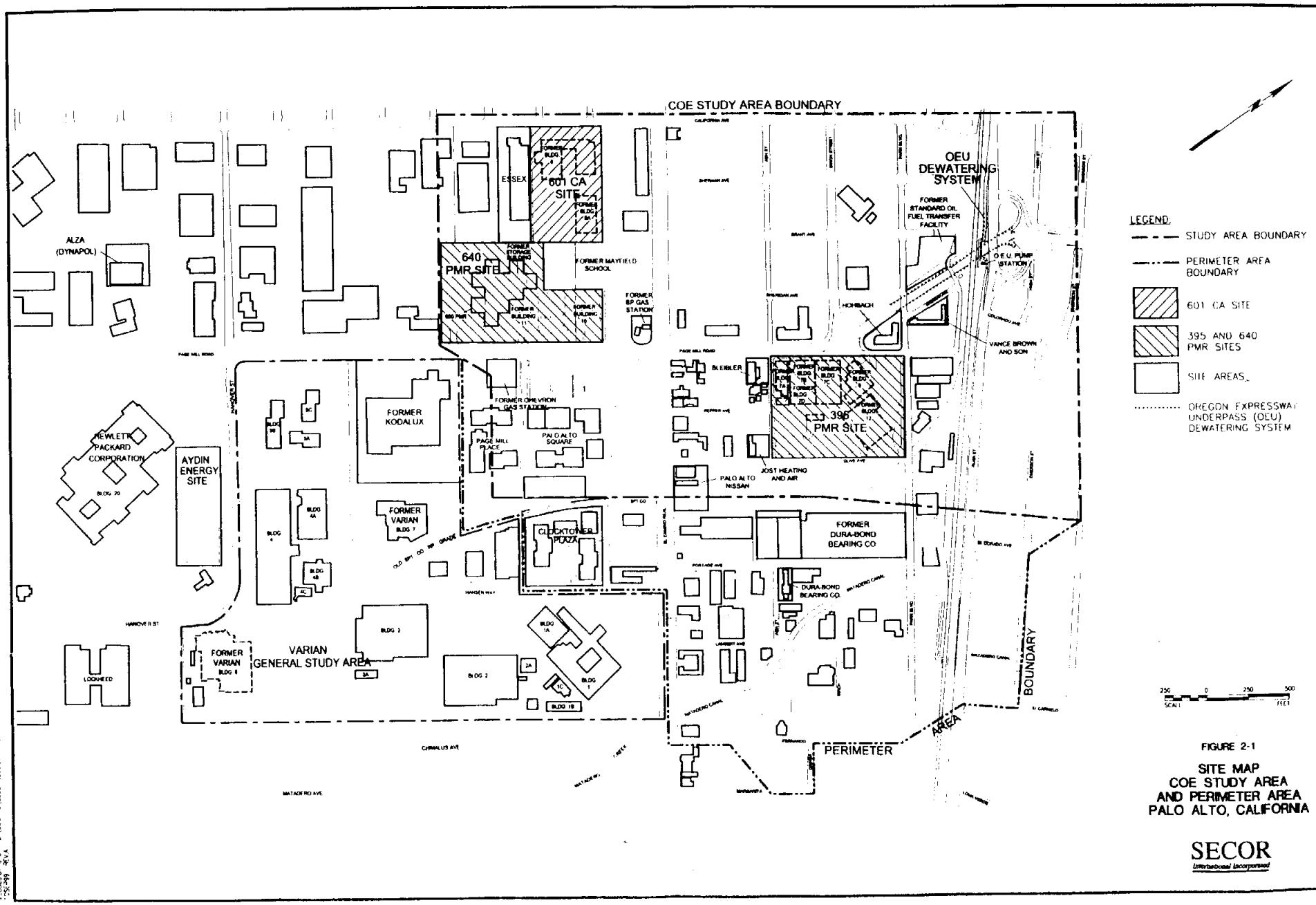

FIGURE 2-1

SITE MAP
COE STUDY AREA
AND PERIMETER AREA
PALO ALTO, CALIFORNIA

SECOR
International Incorporated